What's NEXT?

The Nationwide Evaluation of X-Ray Trends (NEXT) is a national program conducted annually to measure the x-ray exposure that a standard patient receives for selected x-ray examinations. This program is conducted jointly by the Conference of Radiation Control Program Directors (CRCPD), an association of state and local radiation control agencies, and the Food and Drug Administration's (FDA) Center for Devices and Radiological Health (CDRH).

In 1993 the selected NEXT survey was of facilities performing dental radiography. A survey sample which is representative of the United States was randomly chosen from a national database. As this was the first time a survey of dental facilities had been done under NEXT, a new phantom was introduced in order to capture the state of dental radiography performed by facilities. State radiation personnel were trained by the FDA to administer the survey, and approximately 320 facilities participated. Data was collected on each facility's techniques for intraoral, cephalometric and panoramic examinations. Measurements were taken on patient exposure, tube potential, beam quality, and processing. Image quality was also evaluated with a phantom containing imaging objects.

Upon completion of each survey, the data is analyzed by CDRH personnel, and the results are published by the CRCPD. As the purpose of the program is to observe national trends, the published results summarize the basic statistical results of each surveyed parameter, and no attempt is made to establish potential statistical relationships. For information on how to obtain a copy of the published results of this or other previous NEXT surveys contact the CRCPD in Frankfort, Kentucky, at 502/227-4543.

SURVEY RESULTS

Intraoral

ESE _____

kVp _____

Time (sec) _____

Processing speed
STEP* test result _____

Darkroom fog _____

Cephalometric

ESE _____

kVp _____

Time (sec) _____

Processing speed
STEP* test result _____

Darkroom fog _____

Panoramic

kVp _____

Time (sec) _____

*STEP: Sensitometric Technique for the Evaluation of Processing

Nationwide Evaluation of X-Ray Trends

(NEXT)

1993 Dental X-Ray Data

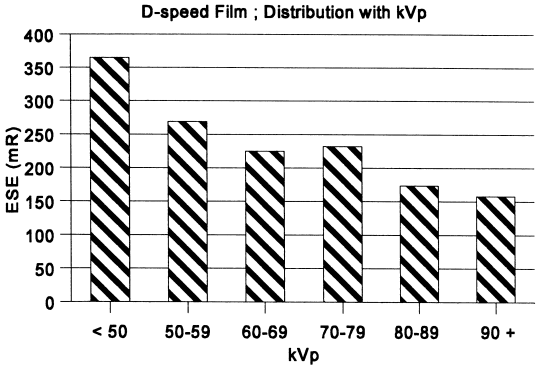
Conference of Radiation Control Program Directors

and

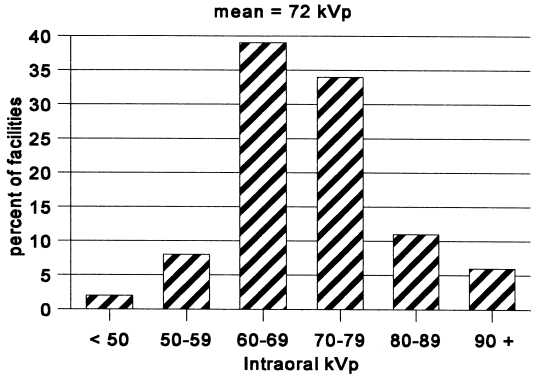
The Center for Devices and Radiological Health

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Food and Drug Administration

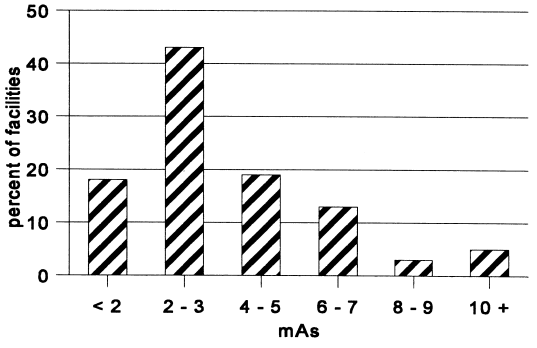
Mean Intraoral Entrance Skin Exp



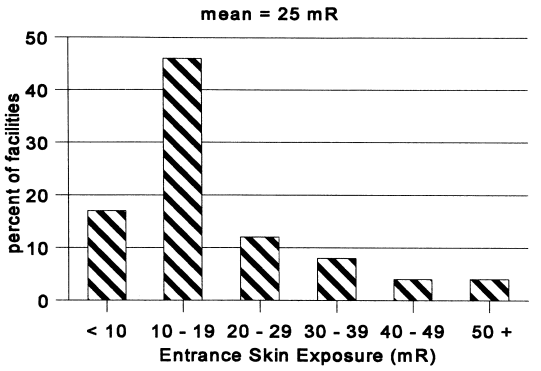
Measured Intraoral kVp



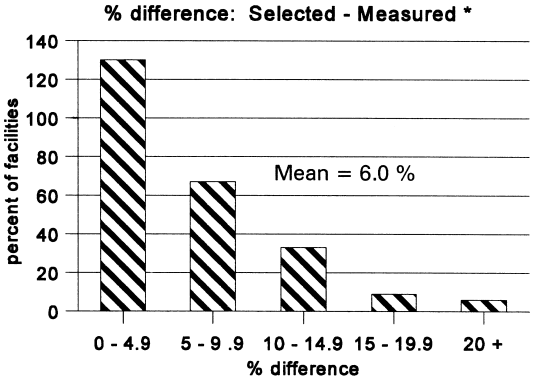
Intraoral mAs



Cephalometric Entrance Expos



Intraoral kVp



*percent difference calculated as
absolute value of (meas'd kVp - selected kVp) x 100
selected kVp

Dental survey film processing findings

1. No. of facilities doing intraoral exam that do manual processing: 107 (N=313)
2. No. of intraoral manual processing facilities that do sight processing: 26 (N=92)
3. No. of facilities doing cephalometric exams that do manual processing: 6 (N=18)
4. No. of cephalometric manual processing facilities that do sight processing: 1 (N=5)

NEXT Dental Statistical Evaluation

Intraoral

	mean	std dev	min	max
ESE (D-speed ; mR)	224	107	22	1000
ESE (E-speed; mR)	162	84	40	364
Films per patient	4	3.6	1	22
HVL (mm Al)	2.3	0.5	1.3	6.8
Exp time (sec) †	0.40	0.32	0.07	3.90
phantom film OD	1.48	0.53	0.36	3.24
Visible meshes	2.8	1.04	0	4
Darkroom fog OD	0.08	0.30	0	2.49

† reflects that value selected at control panel

Cephalometric and Panoramic

Cephalometric :	mean	std dev	min	max
selected kVp	81	10	65	110
Exp time (msec)†	674	500	100	2000
Darkroom fog OD	0.10	0.12	0.01	0.42
Panoramic :				
selected kVp	79	11	50	95
Exp time (sec)†	17	3	8	23

† reflects that value selected at control panel

Film Processing

Intraoral and Cephalometric exams*

	% under	% normal	% Over
Intraoral	49	40	11
Cephal.	29	43	29

* Values have been rounded to nearest whole integer